

What is claimed is:

1. A piezoelectric crystal material of gallium phosphate, wherein an angle  $\alpha$  is defined to be in a range from  $10^\circ$  to  $20^\circ$ , a crystallographic Y-axis and a crystallographic Z-axis of a gallium phosphate crystal that have been rotated counterclockwise about an X-axis through the angle  $\alpha$  is  
5 referred to as a Y'-axis and a Z'-axis, respectively,

wherein said piezoelectric crystal material is provided as a plate-shaped member which is elongate in an X-axis direction and cut from the gallium phosphate crystal parallel to an X-Z' crystal plane of gallium phosphate, and said plate-shaped member has sides parallel to an axis  
10 that is obtained by rotating said Y'-axis counterclockwise about said X-axis in an angular range from  $1^\circ$  to  $3^\circ$ .

2. The piezoelectric crystal material according to claim 1, wherein said piezoelectric crystal material is formed in a rectangular shape that is elongate in said X-axis direction.

3. The piezoelectric crystal material according to claim 2, wherein said plate-shaped member has a thickness  $t$  and a width  $w$  in a direction perpendicular to said X-axis, said thickness  $t$  and said width  $w$  satisfying  $3 \leq w/t \leq 20$ .

4. The piezoelectric crystal material according to claim 2, wherein said angle  $\alpha$  is  $15^\circ$ .

5. The piezoelectric crystal material according to claim 4, wherein the sides of said plate-shaped member is parallel to an axis that is obtained by rotating said Y'-axis about said X-axis in said Z'-axis direction through an angle of 1.5°.

6. A piezoelectric resonator of gallium phosphate, comprising:  
a piezoelectric crystal material; and  
electrodes disposed respectively on opposite principal surfaces of said piezoelectric crystal material, for exciting piezoelectric vibrations in  
5 said piezoelectric crystal material;  
wherein an angle  $\alpha$  is defined to be in a range from 10° to 20°, a crystallographic Y-axis and a crystallographic Z-axis of a gallium phosphate crystal that have been rotated counterclockwise about an X-axis through the angle  $\alpha$  is referred to as a Y'-axis and a Z'-axis,  
10 respectively, and  
wherein said piezoelectric crystal material is provided as a plate-shaped member which is elongate in an X-axis direction and cut from the gallium phosphate crystal parallel to an X-Z' crystal plane of the gallium phosphate, and said plate-shaped member has sides parallel to an axis  
15 that is obtained by rotating said Y'-axis counterclockwise about said X-axis in an angular range from 1° to 3°.

7. The piezoelectric resonator according to claim 6, wherein said piezoelectric crystal material is formed in a rectangular shape that is elongate in said X-axis direction.

8. The piezoelectric resonator according to claim 7, wherein said plate-shaped member has a thickness  $t$  and a width  $w$  in a direction perpendicular to said X-axis, said thickness  $t$  and said width  $w$  satisfying  $3 \leq w/t \leq 20$ .